Panoramic Stereoviewer

STATINTL

Status Report

Covering the period from September 21, 1963 to February 7,1964

The mechanical and electrical assembly of the instrument was completed on October 30th and the instrument was moved to the Photogrammetry R&D laboratory. The plexiglass drums were re-installed on the instrument in order to complete the mechanical and electrical adjustment of the instrument and permit a preliminary evaluation of the instrument.

During the period of 9/24 and 11/1 all four glass drums were broken by the vendor. The first drum was broken during the grinding operation after which they changed their grinding fixture to correct the problem. The second drum broke on 10/2 and was blamed on the heat wave they were having on the Coast and the method of mounting used to hold the drum. They replaced the mounting ring with a ring made of a material with a low coefficient of expansion, similar to pyrex. On 10/9 we were advised that the third drum had been broken and they did not have an explanation since it apparently broke when not being operated on. The fourth drum was checked for strain in its holding fixture and no deleterious strain was evident. Also
STATINTL a check was made with [redacted] to determine their annealing procedures for the blanks they had furnished and the four replacement drums we had ordered on 10/7. Assurance was given by
STATINTL [redacted] that all pyrex blanks are fully annealed. On 11/1 the vendor called to report that the fourth drum had broken while being removed from the mandril.

On 11/5 four replacement glass drum blanks were received from
STATINTL [redacted] The blanks were checked for bubbles and impurities within the wall that would not clean up satisfactorily in grinding, physical dimensions, and strain. All blanks were acceptable for strain and physical dimensions; however one blank was rejected for bubbles and impurities. It was replaced at no charge on 1/10/64. The blanks are being held at [redacted] pending the STATINTL
contracting officer approval of a cost type subcontract with
STATINTL [redacted]

Between 11/1 and 11/13 the instrument was adjusted mechanically and electrically and investigations were conducted to eliminate film slippage on the drums. The methods investigated included increasing the film tension, using pressure rollers to contact inboard edge of film on drum, coating the drums with substances to increase coefficient of friction between the drum and the film, artificially inducing a static change on the drum and film, and using quarter inch wide strips of material wrapped around the drum to contact the inboard and outboard edges of the film.

SEE: 2/5/64 ltr. for accumulated expenditures 1/31/64

(3/29/66)

The last approach has proved successful. The material used successfully was .006 surgical rubber sheeting cut into quarter inch wide strips.

The customer's visit and preliminary evaluation on 11/13 resulted in the following recommended modifications all of which are being made on the instrument.

1. Add head rest to the instrument.
2. Replace steel bevel gears in X drive with fiber gears to reduce noise.
3. Add light shields to fluorescent tubes to block off the unused part of the tube when viewing 70mm film.
4. Change engraving on center column for X and Y manual drives.
5. Add ball to top of joy stick controls.
6. Add index marks for rotation prisms.

The following are objectionable characteristics noted by the customer's representative in operating the instrument and the action planned or taken to correct.

1. There are hot spots in the illuminated format when viewing film at low power. To correct a ground glass daylight filter is being added to the optical condensing system. This not only eliminates any glare and hot spots but filters out much of the yellowish color when the projection lamps are operated at a low voltage (color temperature) which is necessary when viewing at low magnification.

2. Cannot focus at high power. A check into the adjustment of the optical viewing system revealed that the factory had not completed their adjustment of the objective lenses. The factory did complete the adjustment on 2/5/64 and a preliminary check indicates that the focus holds through all zoom ranges with a maximum resolution at highest power of 128 lines/mm.

3. One drum rotates a slight amount when lowering the field flattener into viewing position which moves the area being viewed at high power out of the field of view. No corrective action has been taken to date; however the problem has been investigated by the electrical designer and the required corrective action has been determined. It will require an adjustment of the circuit which balances the joy stick circuit when the micro switch on the field flattener deactivates the joy stick. Since one side is working properly no problems are anticipated in correcting the other side.

4. Film rubs against the flange of the spool which curls the edge of the film. Previously an empty spool was used to align the instrument axes. To obtain a more precise alignment a special tool was fabricated and used for alignment which eliminated any adjustment error due to variations in the spools. The realignment has been completed and appears satisfactory.

5. Film slips on the drums in manual X drive - all film slippage has been eliminated by adding ¼ inch wide rubber strips to contact the inboard and outboard edges of the film. The outboard strip is adjustable for different width film.

6. Difficult to hold head in correct position for viewing without a head rest. The Five Inch Stereoviewer head rest is being added to the instrument.

7. Fluorescent tubes in the drums for general illumination of the film are very bright and objectionable when not masked by film on the drum. A rotatable light shield which clips on the tubes has been added to mask the portion of the tube which is not being utilized.

8. The plastic drums are objectionable and the viewer should not be shipped until the glass drums are installed. Since there are no glass drums completed or in work, the schedule for completing the instrument will depend on the schedule for obtaining ground and polished drums. All remaining work on the instrument can be completed in the time required to obtain glass drums.

Very little work and only a negligible amount of cost have been accumulated on the project since the first week of December. Work in general has been curtailed panding the resolving of the negotiations for grinding and polishing the glass drum blanks. The following are the expenditures that have been accumulated as of 1/31/64.

Engineering..... [redacted] STATINTL

Manufacturing.....

Material.....

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[redacted]